

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

Claims 1-56 (Cancelled).

Claim 57 (New): Dispensing apparatus for a liquid product contained in a receptacle, comprising a feed nozzle, said apparatus including an assembly housing or a frame for receiving a mechanism actuated by exerting a pressure on an actuator to draw from the receptacle through the orifice of a dosing chamber a determined quantity of said liquid by means of a plunger compressing a return spring, and to then eject said liquid to the exterior, wherein the mechanism includes an element that is mobile in rotation or translation via the action of the actuator, said mobile element adapted to remain in a first position at the start or rest of the actuator's travel, then to act on a control member for the plunger to fill the dosing chamber with liquid and to compress the return spring of said plunger, and, at the end of travel, to then pass into a second position placing said dosing chamber in communication with the exterior by the same orifice as that allowing the liquid to be drawn and, releasing the return spring of the plunger, to drive the liquid from the chamber through a through passage of the housing or the frame.

Claim 58 (New): Apparatus according to claim 57, wherein the actuator is adapted to return to the rest position by resilient return means wound by the travel of said actuator.

Claim 59 (New): Apparatus according to claim 58, including means for re-injecting the liquid contained in the dosing chamber into the receptacle before the actuator has reached

the rest position if the pressure is released before the mobile element has reached the second position for ejection.

Claim 60 (New): Apparatus according to claim 57, wherein the actuator further includes a panel blocking the through passage of the housing or frame in the rest position, said panel including an opening that faces said passage in the ejection position.

Claim 61 (New): Apparatus according to claim 57, wherein the mobile element is formed by a drum provided on its flanks with studs rotatably mounted in the housing or frame, in its diametral part, an assembly formed by the dosing chamber, the plunger and the return spring, said drum being adapted to occupy a first filling position in which the orifice of the dosing chamber is facing the feed nozzle of the receptacle, and after a rotation through an angle, to occupy a second ejection position in which said orifice of the dosing chamber is facing the through passage of the housing.

Claim 62 (New): Apparatus according to claim 61, wherein each rotation stud of the drum includes a loose pinion whose shake is limited by two pins secured to said pinion and engaged in elongated bean-shaped holes of the drum, and wherein the actuator is U shaped surrounding the drum, each arm including both a stop member and a straight rack meshing with the pinion, said stop member adapted to actuate, in a first movement phase of the actuator, a lever articulated in its median part in the housing and the end of which is adapted to move a control member for the plunger for filling the dosing chamber, and said straight

rack adapted to drive, in a second movement phase of the actuator, the pinion and the drum to make it rotate through the angle.

Claim 63 (New): Apparatus according to claim 62, further including a safety catch pivoted in the housing and engaged in a notch of the drum, adapted to immobilize said drum while the dosing chamber is being filled, said catch then being releasable from the notch by a snag of the lever to allow the drum to rotate until said drum reaches the liquid ejection position.

Claim 64 (New): Apparatus according to claim 62, wherein the plunger control member is formed by a staple secured to the end of the plunger, compressing the return spring and including laterally two branches, the ends of which are adapted to follow, once filling is complete, the external contour of a circular cam, formed in the housing or frame, during rotation of the drum from the filling position to the ejection position in which the staple is released from the cam allowing the return spring to push the plunger.

Claim 65 (New): Apparatus according to claim 57, wherein the resilient return means of the actuator comprise two pivoting racks connected by a bridge compressed by a spring, the teeth of said pivoting racks meshing with the pinions of the drum.

Claim 66 (New): Apparatus according to claim 57, wherein the dosing chamber is formed in a unit secured to the housing or frame, and the mobile element is formed by a valve that is movable by the actuator against the return force of springs from a first filling position

by means of a passage formed in the thickness of said valve and connecting the orifice of the dosing chamber and the nozzle of the receptacle, to a second ejection position in which the orifice of the dosing chamber is placed in communication with the exterior through a hole in the valve facing the through passage of the housing or frame.

Claim 67 (New): Apparatus according to claim 66, wherein the actuator includes, parallel to its direction of movement, a plate provided with an opening and against which a reverse L-shaped part is mounted so as to tip, the large arm of said part being provided with an opening facing the opening of the plate and including on each side of its base, a first inclined plane adapted to actuate, in a first movement phase of the actuator, the plunger control member for filling the dosing chamber, and the end of the small arm of said part adapted to act, in a second movement phase of the actuator, on the valve to bring said valve into a position where the orifice of the dosing chamber, the openings of the valve and the plate and the through passage of the housing are aligned to allow the liquid to be ejected.

Claim 68 (New): Apparatus according to claim 67, wherein, during the first and second movement phases of the actuator, the large arm of the reverse L-shaped part is adapted to be held pressed against the plate by means of a spring arranged between the head of the actuator and the small arm of said part.

Claim 69 (New): Apparatus according to claim 67, wherein the plunger control member comprises a clamp, the base of which is adapted to allow the plunger to be fixed, the return spring to be held, and two branches, ending in two lugs, each provided with two

chamfers substantially parallel to the inclined plane of the L-shaped tipping part, to be connected.

Claim 70 (New): Apparatus according to claim 67, wherein the reverse L-shaped tipping part further includes on each of its edges a second inclined plane parallel to the first inclined plane adapted to allow said part to move aside by tipping against the chamfers of the clamp when the actuator is returned to the rest position by the resilient return means.

Claim 71 (New): Apparatus according to claim 70, wherein the resilient return means comprise two bending springs, one end of which is secured to the unit of the housing or frame and the other end of which abuts underneath the head of the actuator.

Claim 72 (New): Apparatus according to claim 70, wherein the resilient return means comprise a helical spring disposed between the head of the actuator and the unit of the housing or frame.

Claim 73 (New): Apparatus according to claim 66, wherein the unit includes vertically a wall against which a reverse L-shaped part can slide or tip, the large arm of said part being provided with an opening and the small arm being flexible and gripped at its end in an extension of the actuator, said L-shaped part including on each side of its base, a first inclined plane adapted to actuate, in a first movement phase of the actuator, the plunger control member for filling the dosing chamber, and the end of the small arm of said part adapted to act, in a second movement phase of the actuator, on the valve to bring said valve

into a position where the orifice of the dosing chamber, the openings of the valve and the plate and the through passage of the housing are aligned to allow the liquid to be ejected.

Claim 74 (New): Apparatus according to claim 57, wherein the receptacle is formed by a bottle fixed in the housing or the frame.

Claim 75 (New): Apparatus according to claim 57, wherein the housing or the frame further includes a sliding element allowing the distance between the point of ejection of the liquid and the point of impact on a target to be adjusted.

Claim 76 (New): Apparatus according to claim 76, wherein the liquid is an ophthalmic product and the target is a patient's eye.

Claim 77 (New): Apparatus according to claim 57, wherein the plunger has a head formed by a reversed double cone made of a rigid material, one end of which is fixed onto the rod of the plunger, and the other end of which, forming the plunger head, is fitted with a flexible material with a rounded end.

Claim 78 (New): Apparatus according to claim 77, wherein the bottom of the dosing chamber has a complementary shape to the end of the plunger head.

Claim 79 (New): Apparatus according to claim 57, wherein the same actuator is adapted to be used for the actions from the rest position to ejection.

Claim 80 (New): Apparatus according to claim 57, wherein the actuator is adapted to perform a substantially continuous movement.

Claim 81 (New): A dispensing apparatus for a liquid product, the apparatus comprising a) a housing or frame, b) a receptacle for the liquid with a feed nozzle arranged substantially stationary with respect to the housing or frame, c) a dosing chamber having an orifice, d) a mechanism arranged to allow at least ejection of liquid through the orifice, and e) a through passage arranged to allow the ejected liquid to pass in a direction different from the feed nozzle or opening, wherein i) the mechanism comprises a mobile element movable with respect to the housing or frame between at least a first position in which the orifice of the dosing chamber and the feed nozzle or opening are in flow communication and a second position in which the orifice and the through passage are in flow communication, and ii) the mechanism is arranged to allow aspiration of liquid through the orifice when the mobile element is in the first position and ejection of liquid through the orifice when the mobile element is in the second position.

Claim 82 (New): The apparatus of claim 81, wherein the mobile element is adapted to move or carry the dosing chamber between a filling position, when the mobile element is in the first position, and an ejection position, when the mobile element is in the second position.

Claim 83 (New): The apparatus of claim 82, wherein the dosing chamber comprises a substantially cylindrical barrel, defining a concentric barrel axis.

Claim 84 (New): The apparatus of claim 83, wherein the mobile element is adapted to move or carry the dosing chamber in a rotational movement around a rotation axis different from the barrel axis.

Claim 85 (New): The apparatus of claim 84, wherein the rotation axis is substantially perpendicular to the barrel axis.

Claim 86 (New): The apparatus of claim 81, wherein the mobile element comprises a valve, having a passage and a hole or the through passage, the passage being adapted to connect the nozzle or opening with the orifice when the mobile element is in the first position and to align the orifice with the hole or the through passage when the mobile element is in the second position.

Claim 87 (New): The apparatus of claim 86, wherein the passage is adapted to be shut off when the mobile element is in the second position.

Claim 88 (New): The apparatus of claim 87, wherein the passage is shut off in both ends.

Claim 89 (New): The apparatus of claim 86, wherein the dosing chamber is arranged substantially fixed with respect to the housing or frame.



Claim 90 (New): The apparatus of claim 81, wherein the mechanism is adapted to perform in sequence the aspiration of liquid in the first position, the movement of the mobile element to the second position, and the ejection of liquid in the second position.

Claim 91 (New): The apparatus of claim 90, wherein the mechanism is adapted to perform the aspiration by retraction of a pump member against a return spring and to perform the ejection by release of the return spring.

Claim 92 (New): The apparatus of claim 90, wherein the mechanism is adapted to return to the start or rest position after liquid ejection.

Claim 93 (New): The apparatus of claim 92, wherein the mechanism is adapted to return to the start or rest position also before liquid ejection.

Claim 94 (New): The apparatus of claim 93, wherein the mechanism is adapted to reinject the aspirated liquid in the receptacle if the return takes place before ejection.

Claim 95 (New): The apparatus of claim 92, wherein a return member is arranged to bias the mechanism towards the start or rest position.

Claim 96 (New): The apparatus of claim 81 wherein at least one actuator is included and is adapted to operate the mechanism.

Claim 97 (New): The apparatus of claim 96, wherein the actuator is arranged to be maneuvered by application of manual force.

Claim 98 (New): The apparatus of claim 96, wherein the actuator is adapted to perform a substantially continuous movement during which the mechanism performs at least the aspiration step and the movement of the mobile element between the first position and the second position.

Claim 99 (New): The apparatus of claim 98, wherein the substantially continuous movement also includes the ejection step for the mechanism.

Claim 100 (New): The apparatus of claim 99, wherein the actuator is adapted to give a tactile feed-back immediately before the ejection step in the continuous movement.

Claim 101 (New): The apparatus of claim 81, wherein the dosing chamber comprises a substantially cylindrical barrel, defining a concentric barrel axis and having a substantially constant cross-section area perpendicular to the barrel axis, and a plunger inserted in the barrel and being movable along the barrel axis.

Claim 102 (New): The apparatus of claim 101, wherein the orifice has a substantially smaller cross-section area than the barrel.

Claim 103 (New): The apparatus of claim 102, wherein the length of the orifice in the liquid flow direction is substantially shorter than the plunger movement during aspiration and/or ejection.

Claim 104 (New): The apparatus of claim 103, wherein the orifice length to plunger movement length is less than 1:5.

Claim 105 (New): The apparatus of claim 81, wherein the orifice is adapted to create a liquid spray.

Claim 106 (New): The apparatus of claim 81, wherein the orifice is adapted to create a substantially coherent stream.

Claim 107 (New): The apparatus of claim 81, wherein, in the second position, the orifice is adapted to eject liquid substantially directly into the air.

Claim 108 (New): The apparatus of claim 107, wherein the through passage is substantially wider than the width of the orifice.

Claim 109 (New): The apparatus of claim 108, wherein any apparatus part in front of the orifice is substantially wider than the orifice.

Claim 110 (New): The apparatus of claim 81, comprising an eye piece or eye cup adapted to define a predetermined distance to the orifice.

Claim 111 (New): A method for operating a dispensing apparatus for a liquid product, the apparatus comprising a) a housing or frame, b) a receptacle for the liquid with a feed nozzle arranged substantially stationary with respect to the housing or frame, c) a dosing chamber having an orifice, d) a mechanism arranged to allow at least ejection of liquid through the orifice, and e) a through passage arranged to allow the ejected liquid to pass in a direction different from the feed nozzle or opening, the method comprising i) connecting the orifice and the nozzle or opening in flow communication, ii) filling liquid into the dosing chamber through the orifice, iii) aligning the orifice with the through passage, and iv) ejecting liquid from the dosing chamber through the orifice.

Claim 112 (New): The apparatus of claim 103, wherein the orifice length to plunger movement length is less than 1:10.

Claim 113 (New): The apparatus of claim 103, wherein the orifice length to plunger movement length is less than 1:20.